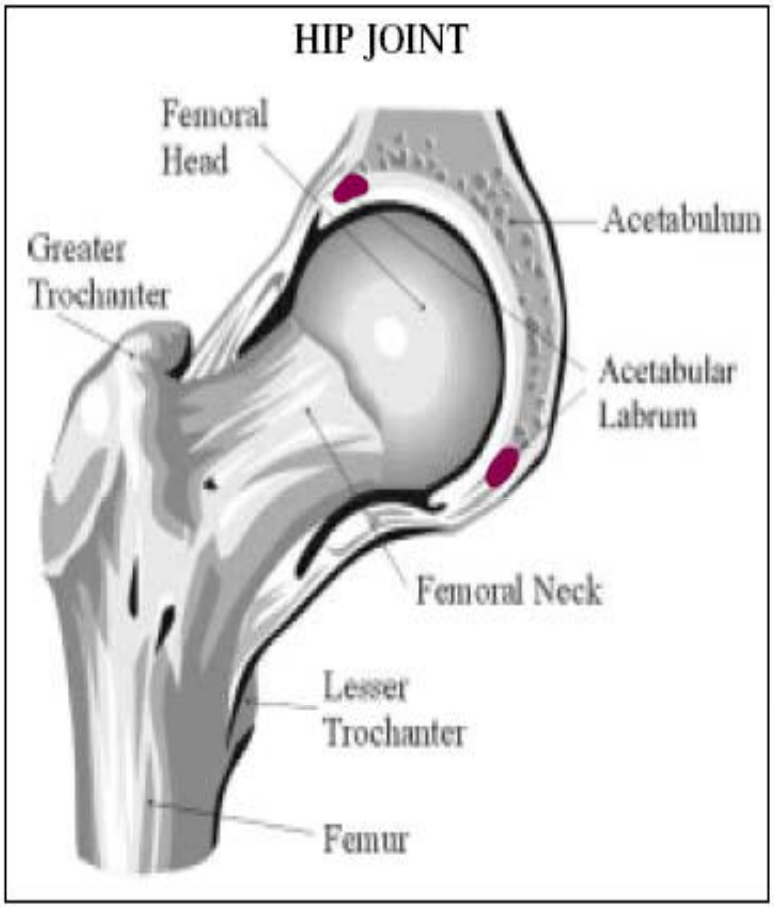
What Is Femoral Acetabular Impingement?

Patient Guide into Joint Preservation

Normal Hip Joint

- The hip joint, also known as a "*ball and socket*" joint is located where the *femur* (the thigh bone) meets the pelvic bone. The upper segment ("head") of the femur is a round "*ball*" that fits inside the acetabulum or the "*socket*" part of the pelvic bone. The "ball" is normally held in the "socket" by very powerful ligaments that form a complete capsule around the joint
- Both the ball and socket are covered with a thin layer of smooth cartilage. This cartilage acts to cushion the joint, allowing the bones to move with very little friction, allowing your hip to work properly. The depth of the acetabulum (socket) is increased by a fibrocartilaginous rim called a labrum. The labrum acts as a gasket to ensure the ball fits into the socket, further securing the hip joint



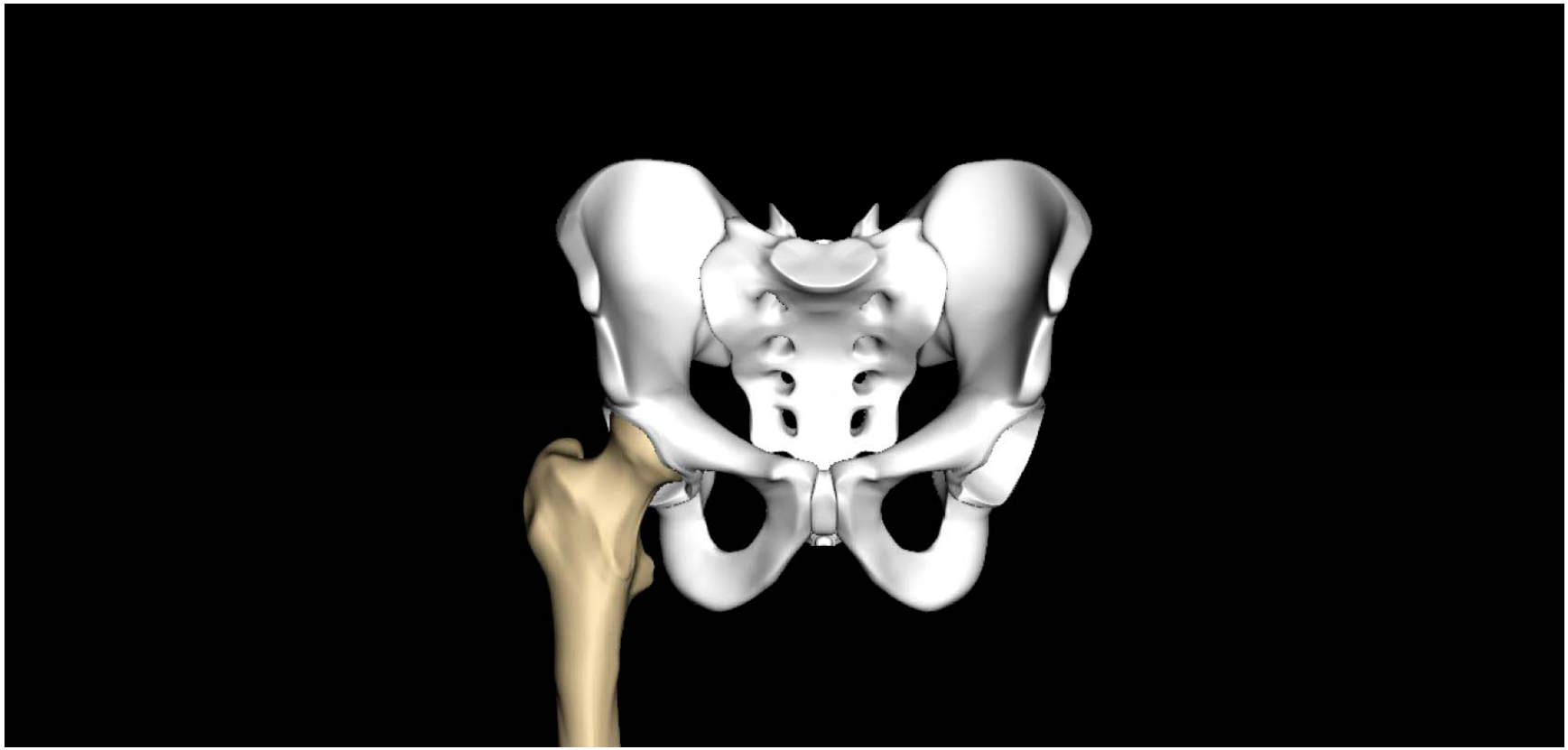
What is Femoral Acetabular Impingement (FAI)

- What is it?
- Femoral Acetabular Impingement (FAI) occurs when the head of the femur does not have full range of motion within the socket.This abnormal contact, with time, can cause injury to the fibrocartilaginous labrum that lines the socket. The injury to the labrum can then continue to progress and result in degenerative joint disease that can result in arthritis.
- Who gets it?
- Impingement can present at any time between the teenage years and middle age.
- Impingement usually occurs in young athletic patients and presents with a slow onset of groin pain that may start after a minor trauma.

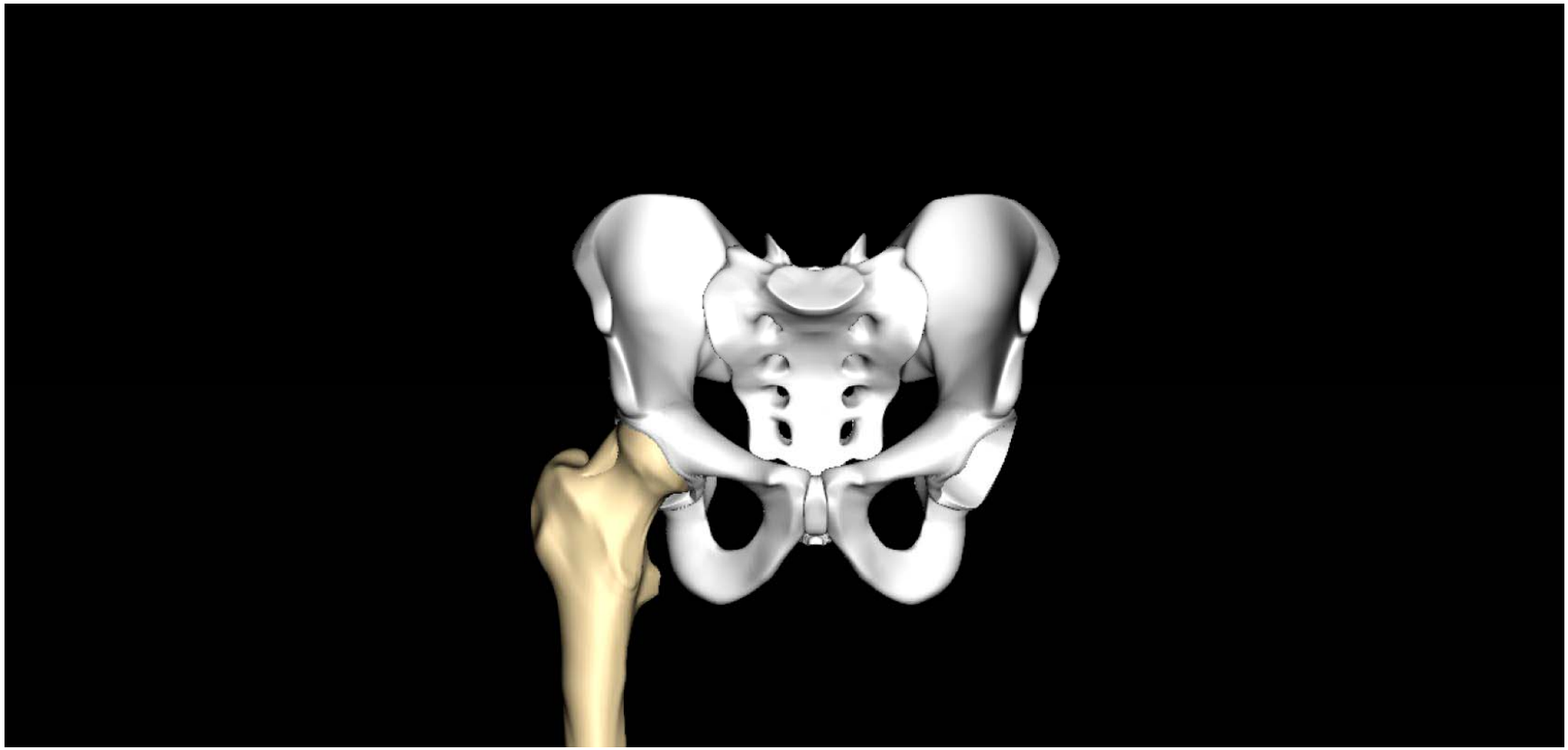
Signs and Symptoms

- During the initial phase, many patients first notice an intermittent pain in the front of their hip or groin area.
- The pain may become worse with excessive demand on the hip from physical activity or after prolonged sitting
- Walking up hill is found to be difficult
- The pain can also be a consistent dull ache with or without a catching and/or sharp, popping sensation
- Pain can also be present along the side of the thigh and in the buttocks.

Normal Range of Motion of the Hip



Femoral Impingement of the Hip

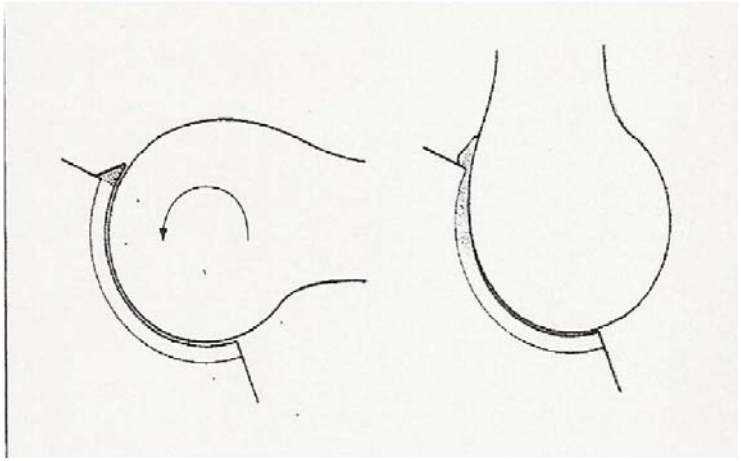


Types of Impingement

- There are 2 distinct types of FAI based on the pattern of injury the labrum:
- CAM Impingement
- Pincer Impingment

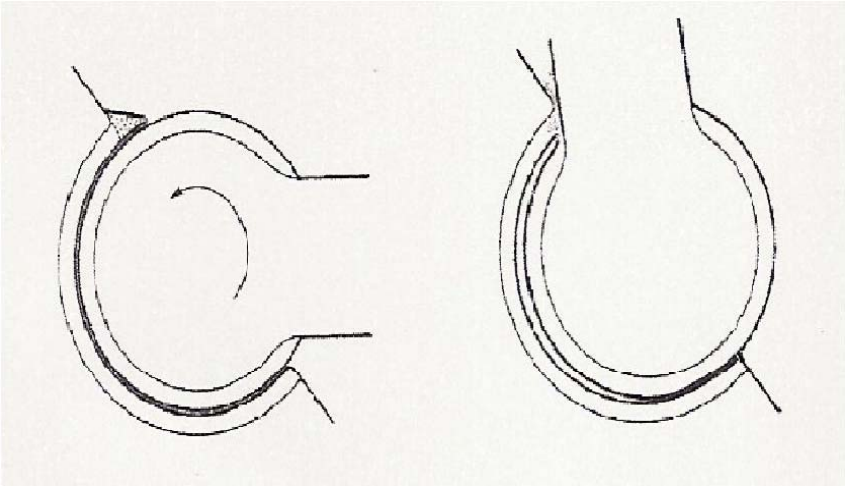
CAM Impingement

- Cam impingement occurs when an larger abnormally shaped femoral head is jammed into the acetabulum during normal range of motion. This jamming results in tearing of the labrum and/or pulling the labrum away from the rim. The tear often occurs in the top-front part of the labrum and most commonly occurs in young active male patients.



Pincer Impingement

- Pincer impingement results from abnormal contact between the rim of the acetabulum and the femoral neck. The abnormal contact is mostly the overcoverage of the femoral head

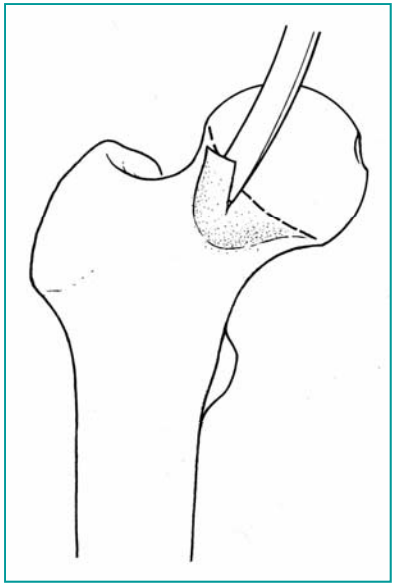


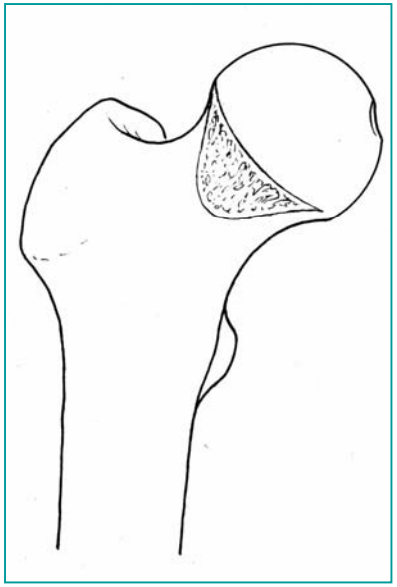
How Is It Diagnosed?

- Physical examination of the hip by a trained doctor often reveals limitations in range of motion.
- A maneuver test that looks for impingement is almost always positive.
- X-ray and magnetic resonance imaging (MRI) play an important role in diagnosing FAI. X-ray can reveal an excess of bone on the femoral head or neck, and on the acetabular rim.
- An MRI can reveal fraying or tears of the cartilage and labrum. A special MRI called an MRI arthrogram.

Surgical Treatment offered at the Rothman Institute

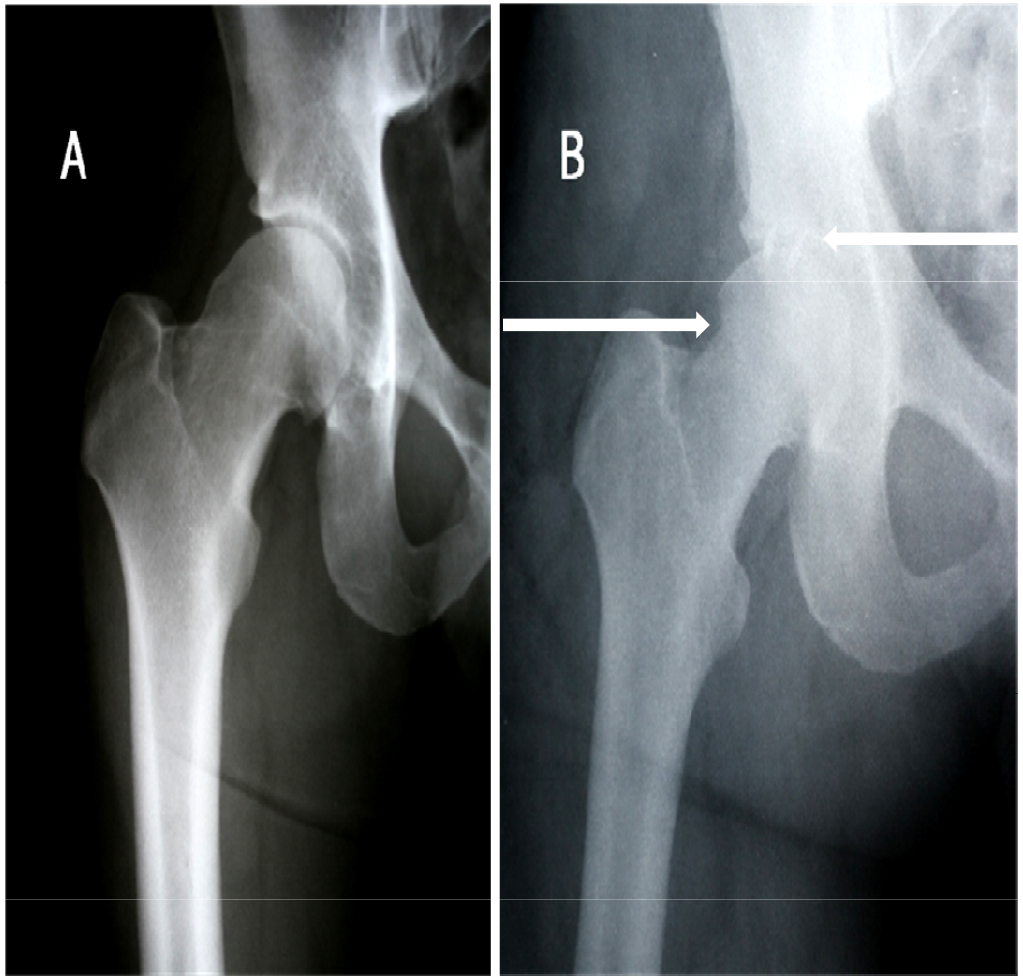
- *Femoral Acetabular Osteoplasty* is the open surgical procedure performed for FAI.
- This procedure is the removal of a prominent area of bone from the femoral neck which restores the femoral neck clearance to allow an impingement-free range of motion for the affected hip, thus hopefully ending the pain.
- The goal of this procedure is to remove enough bone from the femoral neck to allow flexion of 120 degress and rotation of 40 degrees.
- After sufficient clearance is found, any tear to the labrum is then repaired by reattachment to the acetabulum using non-absorbable (permanent) anchor sutures





Femoral Acetabular Osteoplasty Radiographs

- Figure A. Shows Before x-ray of patient
- Figure B. Shows the prominent removal of bone on the femoral neck and two anchor sutures in which the labrum is repaired



Commonly Asked Questions:

- Where is the procedure performed?
  - All operations are performed at Thomas Jefferson University Hospital
- How long is the procedure?
  - Average length of the procedure is 75 minutes in the OR. The patient is then transferred to the recovery room where when stable is transferred to our orthopedic unit staffed with highly trained orthopedic nurses
- How long is the incision?
  - The wound is covered overnight with a bulky dressing which is removed the next morning. On average the incision is about 7cm long and is closed with dissolvable sutures
- How long is my hospital stay?
  - On average patients are inpatient for overnight observation

Commonly Asked Questions cont.

- What should I expect post-operatively?
  - All patients are will receive intravenous fluids over night and will be given oral pain medication (ie vicodin, darvocet, tylenol #3).
  - Patient might feel numbness or tingling for several hours due to the spinal anesthesia.
  - Foley catheters are placed in the OR because of spinal anesthesia to prevent urinary retention and will be taken out early the next morning
  - All patients will be placed on anti-coagulation therapy for prevention of deep vein thrombosis (blood clot in calf) and/or pulmonary embolism
- What needs to happen for me to be discharged?
  - Our physical therapists will evaluate the patient the next morning. Patients should expect to participate in 1-2 session of therapy on their post-operative day. All patients need to be “cleared” by PT before allowed to be discharged.
  - All patients will given written discharge instructions that are explained by nurse before discharge. Which include emergency number if there are any questions when patient returns home.

Commonly asked Questions cont.

- What are my restrictions and for how long?
  - All patients must remain toe-touch weight bearing for six weeks for labrum to heal.
  - Range of motion more than 90 degrees is prohibited
  - Common misconception is that patients will be bed bound. Not true we encourage ambulation with assistive devices.
- When will I start physical therapy?
  - 1-2 session of home therapy by home care agency might be recommended by therapist in the hospital to make sure patient is safe at home
  - Outpatient therapy will start after six weeks at which time patient will receive a script to start at a facility convenient to them

Commonly Asked Questions cont.

- When can I drive?
- Patients are cleared to drive at the six week post-op appointment

- When do I follow up in the office?
- All patients will be seen at the six week post-operative period
- Patients will have a post-operative x-ray on arrival
- All patients will be given a script to start outpatient therapy

What you need to know

- This procedure does not have a 100% success rate.
- The goal is not the end all from having to receive a total hip replacement in the future but hopefully prolong the need for many years
- Patients that have significant arthritis already in the hip are not candidates for this procedure. The target population is young active patients that are too young for a total hip replacement
- Great strides are being made in research of cartilage regeneration. Those who have a artificial prothestic will not be a candidate for this in the future. Our goal is not only to relieve the patient's symptoms but also, slow down the rate of arthritis in hopes patients will keep their native hips as long as possible and be candidate when such advancements are available.

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